

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 26, 2001



IPM Update

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CEW and ECB Maps

No **corn earworm** and **European corn borer** distribution maps will be produced for the rest of the season. See the individual crop sections for information about the remaining trap levels, and look at the sweet corn section for the highest local blacklight trap counts for both of these pests. We are continuing to provide trap data to the Sweet Corn Pest Monitor, a web site managed by Penn State University. Go to www.ento.psu.edu/vegetable/sweetcorn/default.html and click on the current date for each pest to see trap counts for the mid-Atlantic region.

Cole Crops

The levels of the cole crop worms (**cabbage loopers**, **imported cabbageworms**, and **diamondbacks**) continue to remain low in most areas. Check fields weekly for the presence of worms feeding on the undersides of the leaves and within the heart leaves. Prior to heading, treat broccoli, cabbage, or cauliflower fields when 20% of the plants are infested with any larvae. As the heads begin to form, treat when 5% of the plants are infested. For the leafy greens, treat fields when 10% of the plants are infested with any larvae. Identify the predominant insect species so that the appropriate materials can be used if threshold levels are exceeded.

Although insect levels have been low, don't overlook scouting fields for the presence of fungal diseases, particularly **downy mildew**. Look for yellow blotches on the upper surface of the leaf associated with a pale white sporulation on the underside of the leaf. Begin a protective fungicide schedule at the first sign of disease. See Steve Johnston's Vegetable Crop Diseases column in this newsletter or consult the *2001 Commercial Vegetable Production Recommendations* book for disease control options.

Lettuce

The adult **corn earworm** (CEW) population increased again over the past week in the southern blacklight traps as a result of the warmer weather (see the sweet corn section below for local counts). Some areas are showing high levels (greater than 10 per night) but the cool weather that is expected for the rest of the week should slow egg hatch and larval development. Nonetheless you need to make sure larvae do not get into the plants prior to the heading stage. Scout fields especially

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Water Seminar: "Water for South Jersey - Will the Supply Meet the Demand?"

The availability of water is rapidly becoming the most limiting factor in managing land in southern New Jersey. Competing demands for development, agriculture and the maintenance of natural ecosystems are starting to exceed the supply, causing economic hardships, political and social antagonisms, and a loss of ecosystem services from streams, wetlands and estuaries.

New Jersey Water Resources Research Institute, together with the Southern New Jersey Development Council, will co-sponsor a special conference to address these issues on Thursday, October 4, 2001, entitled "Water For South Jersey - Will the Supply Meet the Demand?" Seventeen other state organizations are also co-sponsoring this event.

This 3/4 day seminar will be held on Thursday, October 4th, from 8:00 a.m.(registration) until 3:10 p.m. at The Renaissance Room, 194 Fries Mill Road, Turnersville, NJ 08012.

Speakers include water professionals from New Jersey Department of Environmental Protection, US Geological Survey, Delaware River Basin Commission, Association of New Jersey Environmental Commissions, the Environmental Law Practice group of McCracken, Walker and Rhoads, LLP, Builders League of South Jersey, New Jersey Agricultural Experimental Station, New Jersey American Water Company, Natural Resources Conservation Service, New Jersey Water Resources Research Institute, and more.

This conference will bring together all of the users of water in southern New Jersey to begin to solve these problems. The needs for water by each sector will be explored, placed in the context of both the potential supply and the legal and institutional frameworks being used to manage the resource. Finally, alterna-

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as the heads begin to form to make sure that small CEW larvae are not infesting the plants. Consider treating fields if 1 larvae is found per 30 plants.

Pumpkins

In some scouted fields with mature fruit, **phytophthora** fruit rot has started to appear following recent heavy rains. If fruit must remain in the field for some time, consider using a fungicide that will help prevent the spread of the fruit rot phase of this organism. The best control is prompt removal of mature fruit from the field. This practice will reduce fruit damage from fungal pathogens as well as insects and vertebrate pests.

Spinach

The main pests observed in a few spinach fields so far have been the **webworms**. However, the **beet armyworm** (BAW) pheromone trap levels, especially in Cumberland County, have increased over the past week, so BAW larvae may soon start to show up in some fields. The cool weather expected this week should slow the adult activity and reduce the rate of egg hatch and larval development. Early detection and treatment when the worms are small is the most effective way to control infestations, especially for BAW. Soon after plant emergence, begin monitoring fields weekly for the presence of worms and determine the predominant pest. Consider treating fields when 5% of the plants are infested with small webworms or if 1 BAW larvae is found on 10 plants.

When scouting fields for insects also look for the presence of **white rust**, which appears as white blister-like pustules on the undersides of the leaves. Begin fungicide treatments at the first sign of disease.

Sweet Corn

The blacklight trap counts of **European corn borer** (ECB) have declined in most areas except for a little increase in the Salem/Cumberland County area. The silk spray schedule for corn earworm (CEW) will provide control of ECB as well.

The highest average nightly **ECB** blacklight trap catches are:

Centerton	4	Laurel Hills	2	Folsom	1
Seeley Lake	4	Downer	1	Jones Island	1
Cohansey	2	Elm	1	Sergeantsville	1
Elmer	2	Shirley	1	Tabernacle	1

Adult **corn earworm** (CEW) levels increased this past week, with high levels occurring in some areas. The cool weather expected this week should slow adult activity again and decrease the rate of egg hatch and larval development, but a regular silking spray schedule is still recommended for the remaining plantings due to the current levels of CEW present in our area.

The highest average nightly **CEW** blacklight trap catches are:

Elm	27	Centerton	14	Cohansey	7
Medford	22	Indian Mills	14	Jones Island	7
Seeley Lake	18	East Vineland	11	Folsom	6
Elmer	15	Hammonton	8	Shirley	6

General Spray Schedule for Silking Sweet Corn*

South	3 days
Central	3 days
North	3 days

*These are general spray recommendations for large areas of the state. Growers should increase or decrease the intervals based on their local conditions. □

Pest Notes

Gerald M. Ghidui, *Specialist in Vegetable Entomology*

✓ **Cabbage:** **Cabbage loopers** are the primary pest of cole crops at this time throughout New Jersey. Almost no **diamondback moth** larvae and very few **imported cabbageworms** have been recorded throughout cabbage fields in the southern portion of the state.

It is most likely that the lack of southern storm fronts (coastal storms, off-shore hurricanes, etc.) thus far had much to do with the lack of the southern migratory insect pests. The **fall armyworm**, **beet armyworm**, **diamondback moth** and others use these storm fronts to migrate to northern areas. Most storms so far have either passed north or east of New Jersey (hurricane Erin came from the south but went out to sea before reaching the state).

For cabbage looper control, the pyrethroids are very effective (Asana, Ammo, Ambush, Pounce, Warrior), as well as the non-pyrethroids (Lannate, Larvin, SpinTor, Thiodan) and the biological insecticides (or *Bt*'s). Proclaim and Avaunt also work well against worm pests.

✓ **Cucurbit:** **Aphids** and **cucumber beetles** are pests that can be very damaging earlier in the season, primarily because they can transmit plant diseases to cucurbits (aphids transmit virus diseases and cucumber beetles transmit bacterial diseases). For next year, growers that have had problems with these pests should consider an at-plant application of either Admire 2F or Platinum 2SC. These materials are similar in chemistry, can be used at-planting time, and are extremely effective against these pests, with residual control lasting 4-6 weeks or more.

For high aphid populations on cucurbits (pumpkins and others) at this time, Fulfill, Thiodan, MSR and Vydate are labeled. Fulfill was labeled only recently, and has shown an extremely high degree of effectiveness against heavy aphid populations in several crops. Note that Provado (imidacloprid, the foliar spray formulation of Admire) is no longer registered for use on cucurbit crops.

✓ **Pepper:** The **European corn borer** flight activity dropped to zero for several days last week, and it was believed the activity of the second generation ended. However, in several southern New Jersey areas, the activity increased to 4-5 moths per night in the local black-light traps during the past few nights. If the nights stay warm, this activity will likely continue for awhile. However, as the night temperatures drop to 50°F or lower, the activity of most of our insect pests, including the corn borer, ceases. Weather predictions for the rest of this week indicate low night temperatures may be in the high 30's to low 40's, so most borer activity (including larval activity) will stop.

As a general rule, if pesticides are applied for control of insect pests on any crop at this time of the year, it is best to apply them early in the morning on an expected warm day. As the morning temperatures slowly increase, the insects pests become more active, and are more likely to contact the recently-applied treatment (or to ingest the treatment, as in the case of the biological insecticides). By nightfall, the pests again become inactive again. Thus any sprays applied late in the day may not reach the insect pests, and may become less active because of environmental degradation, dilution with dew, exposure to rainfall, etc., before the next warm day. □

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tives and opportunities for managing the supply will be explored.

The conference will provide an opportunity for developers, farmers, industry concerns, environmentalists, municipal officials and resource managers to work together to develop equitable solutions to the problem of water availability in southern New Jersey. Everyone with a stake in water resource management is encouraged to attend.

Jim McGreevey, Democratic gubernatorial candidate for New Jersey, and other invited guests, have accepted an invitation to speak at the buffet lunch, a part of the \$25 seminar fee. There are still spaces available by calling the New Jersey Water Resources Research Institute at 732-932-9632 or by e-mailing for more details to:

derbedrosian@aesop.rutgers.edu.

Contact information and registration fee may be sent to: NJWRRI, ENR Building, 14 College Farm Rd, Rutgers University, New Brunswick, NJ 08901.

The New Jersey Water Resources Research Institute, based at Rutgers University, is a Federally- and university-financed program whose mission is to help solve water resource problems in the state through research, training and information transfer. It provides funding for research on topics ranging from pollutant fate and transfer to wetland ecology, supports graduate and undergraduate student training, publishes a newsletter, and organizes meetings on important water resource issues.

The Southern New Jersey Development Council is a non-profit organization devoted to promoting responsible economic development in southern New Jersey. Its membership, comprised of key leaders and decision-makers in the public and private sectors, hosts informative meetings and special events and supports cooperative efforts to produce a better South Jersey. □

Vegetable Crops Diseases

Stephen A. Johnston, *Specialist in Plant Pathology*

✓ **Asparagus:** If rust is present in fields at this time, apply either chlorothalonil (2-4pt/A), mancozeb or Nova, and repeat every 7-10 days for control. It is important to prevent foliar damage in order not to stress the planting, thereby reducing the incidence of **Fusarium root & crown rot**.

✓ **Bean:** Scout lima bean fields for the presence of **downy mildew**. The disease will occur when fields receive 1.2 inches or more of rain within 7 days, and when the daily temperature during this period is 78°F or less. Apply a copper fungicide at 2 lb/A for control.

✓ **Beet:** Maintain foliar applications of Quadris every 7 days for control of **Cercospora leaf spot**. Do not make more than two sequential applications in a row. After the second application, make an application of a copper fungicide.

✓ **Broccoli raab:** **Bacterial leaf spot** is present in some fields at this time. Infected plants have numerous small, tan, circular lesions scattered over the leaf surface. Infected leaves rapidly decompose. Avoid working in fields while the foliage is wet to reduce spread.

✓ **Carrot:** Maintain foliar applications of chlorothalonil (Bravo, Equus), and repeat every 7-10 days for control of **leaf blights**.

✓ **Cole crops:** **Downy mildew** is present in several cole crops at this time. Lower leaves on infected plants contain several circular yellow lesions, and on the underside of the lesion there is short white sporulation of the fungus present that can best be seen early in the morning. Maintain applications of maneb or chlorothalonil (Bravo or Equus) every 7-10 days for control of **Downy mildew** and **Alternaria leaf spot**.

✓ **Corn, sweet:** Since all fields are beyond the whorl stage of growth, there is no need to apply a fungicide for control of **rust**. **Northern corn leaf blight** has been reported in some fields. Infected leaves contain large elliptical, tan lesions, and rapid defoliation can occur. Once observed, apply a fungicide, and repeat every 7-10 days for control.

✓ **Cucumber:** **Downy mildew** is present at this time. Alternate foliar applications of chlorothalonil (Bravo, Equus, Echo) + Benlate or Topsin M with Quadris every 7-10 days for control of **downy mildew** and **anthracnose**. In some fields, older leaves have tan blotches concentrated along the leaf margin and expanding toward the midrib region. This is the result of drought stress and normal senescence, and is not a disease. If **Phytophthora blight** is present in the field, apply Acrobat 50W + a copper fungicide to protect the fruit from rot.

✓ **Eggplant:** Maintain applications of a copper fungicide + maneb with a spreader sticker adjuvant every 7-10 days to protect against **fruit rots**.

✓ **Greens:** **Downy mildew** is present on turnip greens at this time. Infected leaves have large circular, chlorotic lesions present, and beneath the lesions on the underside of the leaf is short white sporulation of the fungus. Apply Aliette as a foliar spray for control.

✓ **Horseradish:** Scout fields for the presence of **leaf spots**. Once observed, make a foliar application of Quadris 2.1F, and repeat every 7-10 days.

✓ **Leeks:** Maintain fungicide applications at 10-day intervals for control of **purple blotch**. In addition to chlorothalonil (Bravo, Echo, Equus), Quadris 2.1F is also labeled for control. Apply Quadris at 6.2-12.3 fl.oz/A for control.

✓ **Lettuce, Endive and Escarole:** Avoid excess soil moisture by producing the crop on raised beds, and improving the drainage in fields to reduce incidence of **corky root**. Apply Ronilan or Rovral as a directed spray to the base of the plants shortly after thinning or transplanting, and repeat 10 and 20 days later for control of **drop (Sclerotinia)**. For control of **bottom rot (Rhizoctonia)** only use Rovral.

✓ **Muskmelon:** Maintain foliar applications of chlorothalonil (Bravo, Echo, Equus) or mancozeb alternated with Quadris for the control of **Alternaria leaf blight**.

✓ **Parsley:** Apply Quadris 2F as a foliar spray every 7-14 days for control of **Septoria leaf spot**. In order to prevent the development of resistant strains of the pathogen to Quadris, do not make more than 2 applications/crop. If a third fungicide application is needed prior to harvest, apply a copper fungicide. Apply mefenoxam (Ridomil Gold 4E, Ultra Flourish 2E) as a soil surface application prior to emergence to control **damping-off**.

✓ **Pepper:** Maintain applications of a copper fungicide + maneb with a spreader sticker spray adjuvant every 7-10 days to protect against the aerial and fruit rot phases of the **Phytophthora blight**.

✓ **Potato, sweet:** Care must be taken when harvesting potatoes to avoid injury, and potatoes need to be cured as soon as possible after harvest to prevent **surface rot & soft rot**. Potatoes should be cured at 80-85°F and 90% relative humidity for 6-8 days. After curing, temperature should be lowered to 55°F and 90% relative humidity.

✓ **Pumpkins & winter squash:** **Downy mildew** and **Phytophthora blight** are present in several fields at this time. Alternate chlorothalonil (Bravo, Echo, Equus) + Acrobat 50W + a copper fungicide with Quadris or Flint + Acrobat + a copper fungicide for control. Harvest fruit as soon as possible, and remove from field to avoid **Phytophthora fruit rot**.

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Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 84 degrees at Hammonton and Pemberton on the 23rd and 42 degrees at Pemberton on the 18th. Weekly rainfall averaged 1.38 inches north, 0.79 inches central, and 0.47 inches south. The heaviest 24 hour total reported was 1.54 inches at Charlotteburg on the 20th to 21st. Estimated soil moisture, in percent of field capacity, this past week averaged 94 percent north, 86 percent central and 51 percent south. Four inch soil temperatures averaged 64 degrees north, 65 degrees central and 66 degrees south.

Weather Summary For The Week Ending 8 Am Monday 9/24/01

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.93	25.40	-2.25	82	45	67.	7	2837	288	91
CANOE BROOK	1.36	27.23	-1.82	83	46	64.	3	3016	454	96
CHARLOTTEBURG	1.54	23.98	-5.35	80	43	66.	8	2488	456	91
FLEMINGTON	1.67	34.74	6.99	81	49	67.	6	2753	127	96
LONG VALLEY	DATA MISSING									
NEWTON	DATA MISSING									
FREEHOLD	.75	24.07	-2.89	82	47	68.	5	3199	408	91
LONG BRANCH	.93	26.78	-.51	78	50	67.	4	2928	193	91
NEW BRUNSWICK	.71	28.26	.86	82	46	68.	6	3029	106	94
PEMBERTON	.53	22.53	-5.11	84	42	70.	7	3270	407	65
TOMS RIVER	1.39	26.74	-1.16	81	45	67.	4	3035	294	93
TRENTON	.45	26.55	.62	82	49	69.	5	3147	107	75
CAPE MAY COURT HOUSE	.41	21.60	-2.60	80	50	70.	4	3243	468	40
DOWNSTOWN	.66	19.49	-5.90	83	44	67.	2	3118	63	68
GLASSBORO	.80	21.87	-4.83	82	52	70.	6	3437	415	67
HAMMONTON	.65	17.92	-8.75	84	45	68.	4	3239	210	58
POMONA	.15	16.44	-7.76	83	46	69.	6	3136	261	41
SEABROOK	.37	24.84	.38	82	52	69.	4	3393	318	49
ATLANTIC CITY MARINA	.25	16.11	-7.12	79	54	71.	6	3240	438	32
SOUTH HARRISON	.80	23.80	-2.24	82	50	69	NA	3283	NA	NA

*Some values for Flemington were estimated for the period April-May

WES KLINE — GDD BASE 40 PINEY HOLLOW

Last Week 170 (Ending 9/17/01)

This Week 193 (Ending 9/24/01)

✓ **Squash, summer: Downy mildew and Phytophthora fruit rot** are present in some fields at this time. Alternate chlorothalonil (Bravo, Echo, Equus) + Acrobat 50W + a copper fungicide with Quadris or Flint + Acrobat + a copper fungicide for control.

✓ **Spinach: Virus** is present in some fields at this time. Infected plants are severely distorted with a mosaic pattern on the leaves. No control is available at this time. Observe fields for the presence of **white rust**. Once observed, apply a copper fungicide if the planting is young. If the planting is closer to harvest, apply Quadris at 6.2 fl oz /A. Do not make more than 2 consecutive applications of Quadris to avoid the development of resistant strains of the pathogen.

✓ **Tomato:** For control of **foliar & fruit diseases** alternate foliar applications of chlorothalonil (Bravo or Equus) and Quadris every 7 days.

✓ **Watermelon:** Maintain foliar applications of chlorothalonil (Bravo, Equus) alternated with Quadris for control of **Anthraxnose, Alternaria leaf blight & Gummy stem blight**. Make applications every 7-10 days. □

Future of Our Food and Farms Summit

The 3rd Annual Future of Our Food and Farms Summit is on Nov. 29 and 30, 2001 at the Renaissance Philadelphia Hotel Airport in Philadelphia, PA.

Network with farmers, faith-based food providers, legislators and government officials, educators, agribusiness representatives, food wholesalers and retailers, food bank representatives, nutritionists, extension agents, and youth from the Mid-Atlantic region.

The Mid-Atlantic region has a wealth of resources - including some of the richest agricultural soils in the world. It has a diversity of residents - from urban populations - including Philadelphia, PA - to large rural populations including the Amish community in Lancaster, PA.

Competing uses for its vast resources have important implications for our future food system. As federal programs and policies are increasingly shifted to states, local governments and the nonprofit sector to implement — it is important that farmers, consumers, industry, government and nonprofits collaborate.

The Summit is creating a place where these interests can come together to share ideas about problems and solutions affecting the farm and food system in the region. Our intent is to develop and promote recommendations that will guide the formation of farming and food policy in the Mid-Atlantic region, and set the stage to influence future federal, state and local government policies.

Some highlights: Four Secretaries of Agriculture from Pennsylvania, Delaware, Maryland and New Jersey will keynote the opening session. (The US Secretary, Anne Veneman, has been invited). A pre-Summit Hunger Congress, put together by the Food Resources Alliance (FRA), with invited state and federal legislators, will highlight evolving public policies impacting hunger in our region. JoAnn Connelly President of the Greater Philadelphia Food Bank will moderate this session. Thursday's dinner will be a feast of locally grown foods, put together by some of the region's top chefs, including Jill Horn, Delilah Winder, Jack McDavid, and Kevin von Klaus. Finally, with this year's Summit, we are initiating an annual award to be given to the person, organization, or business that has done the most to benefit the Mid-Atlantic food and farming system.

We will disseminate policy recommendations that grow out of discussions at the Summit to leaders in the farm and food system throughout the Mid-Atlantic region.

At the Summit you will hear from experts and your peers about how the region's food system works today - and where it is going - and how we can help to shape it for the future. Learn about inner-city supermarkets, minority entrepreneurs, genetically modified food (GMO's), women in agriculture, rotational grazing, youth involvement in agriculture, marketing to today's health conscious consumers, cooperatives, ethnic produce -and much, much more!

Visit our web site at <http://www.foodfarm.org> or for more information, contact: Meredith Stone at 215-568-0830 • Ext.10 or e-mail fmtrust@libertynet.org. □

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